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EXAMINER

RUTZ, JARED IAN

ART UNIT PAPER NUMBER

2187

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,419

Applicant(s)

DURHAM ET AL.

Examiner

Jared I. Rutz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-33 as amended on 1/17/06 are pending in the instant application. Of these there are 5 independent claims and 27 dependent claims. Applicant's arguments submitted on 1/17/06 have been carefully and fully considered, but they are not persuasive. Accordingly, this action is made **FINAL**.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 1-21 and 27-33** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claims 1, 8, 15, 22, and 27 have been amended to include the limitation "*in case that a storage cell that is identified based on a geographical parameter is not optimal*". The examiner notes that in the remarks filed 1/17/2006, Applicant does not provide support for said limitation.

Paragraph 0024 of the specification of the instant application states:

- a. *"Once the request is received by a protocol server 22A-C, it will be routed to storage grid manager 24 (e.g., to one a possible group of storage grid managers). As will be further described below, storage grid manager 24 is*

configured to determine the most optimal or appropriate storage cell 14A-D for storing the file. In general, this determination is made under the present invention based on certain predetermined performance parameters. For example, the determination can be made based upon a user identity, a storage cost, a specific user requirement, desired a cell usage pattern/balance, a security requirement, a storage cell availability, a redundancy requirement and a network optimization requirement. Thus, if a file required access by a group of users, it could be stored in a storage cell 14A-D that is most central to all such users, not just the user requesting the storage. Moreover, if a certain storage cell 14A-D was nearing capacity, the file might be stored in another (albeit more distant) storage cell 14A-D so that the load of storage cells 14A-D could be kept balanced."

4. The limitation "*in case that a storage cell that is identified based on a geographical parameter is not optimal*", in combination with the other recited limitations of the independent claims, requires that a storage cell is first identified based on a geographical parameter, and then, if the storage cell that is identified based on a geographical parameter is not optimal, a storage cell is identified based on at least one predetermined performance parameter. The specification does not teach using a geographical parameter to determine the most optimal or appropriate storage cell. Further, it does not teach that a storage cell is first determined based on a geographical parameter, and then, in case that a storage cell that is identified based on a geographical parameter is not optimal, identifying a storage cell based on at least one

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predetermined performance parameter as required by independent claims 1, 8, 15, 22, and 27. Although the specification does state that if the selected storage cell is nearing capacity, the file can be stored in another, more distant, storage cell, it does not teach that the first storage cell selected was selected based on a geographical parameter.

5. **Claims 22-26** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claim 22 has been amended to include the limitation "*in case that a storage cell that is identified based on a geographical parameter is not optimal*". The examiner notes that in the remarks filed 1/17/2006, Applicant does not provide support for said limitation. The specification does not teach "*identifying storage cells of the enterprise storage system in which the files are stored based on a mapping in case that a storage cell that is identified based on a geographical parameter is not optimal*" as required by claim 22. Paragraph 0005 lines 10-12 of the specification of the instant application state, "*therefore, when a user issues a request to retrieve a file, the storage grid manager consults the mapping, identifies the corresponding storage cell, and retrieves the file.*" There is no mention as to this only being done in case that a storage cell that is identified based on a geographical parameter is not optimal. Further, the specification does not teach using a geographical parameter to determine an optimal storage cell

6. **Claims 7, 14, 17, 25, and 33** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. These claims each recite the limitation "*wherein the requests are routed to the selected storage cells in identical communication protocols in which the requests are received by the storage grid manager*". Although paragraph 0026 states that the request will typically be routed from storage grid manager 24 using the same protocol in which it was received by storage grid manager, there is no explanation of how this is done. Paragraph 0023 shows that requests can be sent using multiple formats, but there is no mention of these formats being converted before they are sent to the storage grid manager into a format that can be used to communicate with the storage grid controllers, and there is no indication that the storage grid controllers can receive requests in multiple formats. Paragraph 0022 lines 8-9 states that communication between components shown in figure 1 may occur "*via an addressable connection that may utilize any combination of wireline and/or wireless transmission methods*". It is known in the art that wireless communication protocols differ from wired protocols. Although TCP/IP can be used over wired and wireless connections, the TCP/IP packets must be transmitted wrapped in an appropriate protocol for the physical transmission medium. As such one of ordinary skill in the art would not know how messages could be transmitted using identical communication protocols over different

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transmission mediums, claims 7, 14, 17, 25, and 33 are not described in the specification in such a way to enable one of ordinary skill in the art to make and/or use the invention.

Claim Rejections - 35 USC § 101

7. The amendment to claim 27 is sufficient to overcome the rejection of claims 27-33 under 35 U.S.C. 101. Accordingly, the rejection of these claims under 35 U.S.C. 101 is withdrawn.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. **Claims 1, 2, 6, 8, 9, 13, 15, 16, 18, 27, 28, and 32** are rejected under 35 U.S.C. 102(e) as being anticipated by Leung et al (US 2003/0046270).

10. **Claim 1** is taught by Leung as:

b. *A computerized system for managing a geographically separated enterprise storage system, comprising a storage grid manager for receiving requests for storing files from users. See data management server (DMS) item*

104 of figure 1. Paragraph 0078 discuss conditions in which the DMS decides where to store data, and lines 18-21 show that one such condition is when a user stores a data file in the storage system. Figure 1 shows Storage devices 116 separated from the Data Management Server 104 by a communication Network 112. Paragraph 0024 shows that communication network 112 may be a WAN, which provides geographical separation among the components of the storage system. Additionally, paragraph 0031 describes the storage system as being a distributed system.

c. *And for routing the requests to storage grid controllers associated with selected storage cells of the enterprise storage system where the files will be stored.* Paragraph 0029 lines 1-4 shows that the DMS automates the storing of data to the available storage devices. Each of the storage devices (item 116 of figure 1) comprise a storage cell and the associated controller necessary for their function.

d. *Wherein the selected storage cells are identified based on at least one predetermined performance parameter in case that a storage cell that is identified based on a geographical parameter is not optimal.* Paragraphs 0049-0055 give examples of device performance parameters that are used by the DMS to determine the storage location. Paragraph 0076 lines 10-16 shows that a constraint on the storage can be that it is stored on a local storage device. If it is not optimal to store the data on a local storage device, a different storage constraint can be used.

11. **Claim 2** is taught by Leung as:

- e. *The system of claim 1, wherein the storage grid controllers are each associated with a single storage cell. The storage devices are shown to be various dedicated storage devices in paragraph 0031.*
- f. *And wherein the storage grid controllers provide resource availability information about the storage cells to the storage grid manager. Paragraph 0050 lines 11-14 shows that the DMS dynamically monitors the available capacity information by examining the actual usage of the storage device.*

12. **Claim 6** is taught by Leung as:

- g. *The system of claim 1, wherein the predetermined performance parameter is selected from the group consisting of a user identity, a storage cost, a user requirement, a usage pattern, a security requirement, a storage cell availability, a redundancy requirement and a network optimization requirement. Paragraphs 0050-0055 and 0059-0064 give examples of the parameters the DMS may use to decide file storage locations. These examples include user identity, storage cost, user requirements, usage patterns, storage availability, redundancy and network optimization.*

13. **Claim 8** is taught by Leung as:

- h. *A computerized system for managing a geographically separated enterprise storage system, comprising: a storage grid manager for receiving requests for storing files from users. See data management server (DMS) item 104 of figure 1. Paragraph 0078 discuss conditions in which the DMS decides*

where to store data, and lines 18-21 show that one such condition is when a user stores a data file in the storage system. Figure 1 shows Storage devices 116 separated from the Data Management Server 104 by a communication Network 112. Paragraph 0024 shows that communication network 112 may be a WAN, which provides geographical separation among the components of the storage system. Additionally, paragraph 0031 describes the storage system as being a distributed system.

i. *And a set of storage grid controllers associated with a set of storage cells of the enterprise storage system. Each of the storage devices (item 116 of figure 1) comprise a storage cell and the associated controller necessary for their function.*

j. *Wherein the storage grid manager identifies selected storage cells for storing the files based on at least one predetermined performance parameter.* Paragraphs 0049-0055 give examples of device performance parameters that are used by the DMS to determine the storage location.

k. *And routes the requests to the storage grid controllers associated with the selected storage cells in case that a storage cell that is identified based on a geographical parameter is not optimal.* Paragraph 0029 lines 1-4 shows that the DMS automates the storing of data to the available storage devices. Paragraph 0076 lines 10-16 shows that a constraint on the storage can be that it is stored on a local storage device. If it is not optimal to store the data on a local storage device, a different storage constraint can be used.

14. **Claim 9** is taught by Leung as:

l. *The system of claim 8, wherein each of the set of the storage grid controllers are each associated with a single storage cell. The storage devices are shown to be various dedicated storage devices in paragraph 0031.*

m. *And wherein the set of storage grid controllers provide resource availability information about the set of storage cells to the storage grid manager.*

Paragraph 0050 lines 11-14 shows that the DMS dynamically monitors the available capacity information by examining the actual usage of the storage device.

15. **Claim 13** is taught by Leung as:

n. *The system of claim 9, wherein the predetermined performance parameter is selected from the group consisting of a user identity, a storage cost, a user requirement, a desired cell usage pattern, a security requirement, a storage cell availability, a redundancy requirement and a network optimization requirement.*

Paragraphs 0050-0055 and 0059-0064 give examples of the parameters the DMS may use to decide file storage locations. These examples include user identity, storage cost, user requirements, usage patterns, storage availability, redundancy and network optimization.

16. **Claim 15** is taught by Leung as:

o. *A computer-implemented method for storing files in a geographically separated enterprise storage system, comprising: receiving requests on a storage grid manager to store the files. See data management server (DMS)*

item 104 of figure 1. Figure 1 shows Storage devices 116 separated from the Data Management Server 104 by a communication Network 112. Paragraph 0024 shows that communication network 112 may be a WAN, which provides geographical separation among the components of the storage system.

Additionally, paragraph 0031 describes the storage system as being a distributed system.

p. *Identifying storage cells of the enterprise storage system for storing the files based on at least one performance parameter in case that a storage cell that is identified based on a geographical parameter is not optimal.* Paragraphs 0049-0055 give examples of device performance parameters that are used by the DMS to determine the storage location. Paragraph 0076 lines 10-16 shows that a constraint on the storage can be that it is stored on a local storage device. If it is not optimal to store the data on a local storage device, a different storage constraint can be used.

q. *Routing the requests from the storage grid manager to storage grid controllers associated with the storage cells.* Paragraph 0029 lines 1-4 shows that the DMS automates the storing of data to the available storage devices.

r. *And storing the files in the storage cells.* Paragraph 0029 lines 1-4 shows that the DMS automates the storing of data to the available storage devices.

17. **Claim 16** is taught by Leung as:

s. *The method of claim 15, wherein the at least one performance parameter is selected from the group consisting of a user identity, a storage cost, a user*

requirement, a desired cell usage pattern, a security requirement, a storage cell availability, a redundancy requirement and a network optimization requirement.

Paragraphs 0050-0055 and 0059-0064 give examples of the parameters the DMS may use to decide file storage locations. These examples include user identity, storage cost, user requirements, usage patterns, storage availability, redundancy and network optimization.

18. **Claim 18** is taught by Leung as:

t. *The method of claim 15, further comprising the storage grid controllers providing resource availability information about the set of storage cells to the storage grid manager, prior to the identifying step.* Paragraph 0050 lines 11-14 shows that the DMS dynamically monitors the available capacity information by examining the actual usage of the storage device.

19. **Claim 27** is taught by Leung as:

u. *A program product stored on a computer readable medium for managing a geographically separated enterprise storage system, which when executed, comprises a storage grid manager for receiving requests for storing files from users.* See data management server (DMS) item 104 of figure 1. Figure 1 shows Storage devices 116 separated from the Data Management Server 104 by a communication Network 112. Paragraph 0024 shows that communication network 112 may be a WAN, which provides geographical separation among the components of the storage system. Additionally, paragraph 0031 describes the storage system as being a distributed system.

v. *And for routing the requests to storage grid controllers associated with selected storage cells of the enterprise storage system where the files will be stored.* Paragraph 0029 lines 1-4 shows that the DMS automates the storing of data to the available storage devices. Each of the storage devices (item 116 of figure 1) comprise a storage cell and the associated controller necessary for their function.

w. *Wherein the selected storage cells are identified based on at least one predetermined performance parameter in case that a storage cell that is identified based on a geographical parameter is not optimal.* Paragraphs 0049-0055 give examples of device performance parameters that are used by the DMS to determine the storage location. Paragraph 0076 lines 10-16 shows that a constraint on the storage can be that it is stored on a local storage device. If it is not optimal to store the data on a local storage device, a different storage constraint can be used.

20. **Claim 28** is taught by Leung as:

x. *The program product of claim 27, wherein the storage grid controllers are each associated with a single storage cell.* The storage devices are shown to be various dedicated storage devices in paragraph 0031.

y. *And wherein the storage grid controllers provide resource availability information about the storage cells to the storage grid manager.* Paragraph 0050 lines 11-14 shows that the DMS dynamically monitors the available capacity information by examining the actual usage of the storage device.

21. **Claim 32** is taught by Leung as:

z. *The program product of claim 27, wherein the predetermined performance parameter is selected from the group consisting of a user identity, a storage cost, a user requirement, a desired cell usage pattern, a security requirement, a storage cell availability, a redundancy requirement and a network optimization requirement. Paragraphs 0050-0055 and 0059-0064 give examples of the parameters the DMS may use to decide file storage locations. These examples include user identity, storage cost, user requirements, usage patterns, storage availability, redundancy and network optimization.*

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. **Claims 4-5, 11-12, 20-21, 22-24, and 30-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al (cited supra) in view of Microsoft Windows NT Server Administrator's Bible: Option Pack Edition (found at <http://www.windowsitlibrary.com/content/405/25/1.html>).

24. **Claim 4** is taught by Leung as shown supra with respect to claim 1.

25. Leung does not explicitly teach the use of a mapping between files and their storage location to allow the retrieval of the stored files.

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26. The Microsoft Windows NT Server Administrator's Bible: Option Pack teaches:

aa. *Wherein the storage grid manager further maintains a mapping that associates the files with the selected storage cells in which the files are stored.*

The 9th paragraph of page 2 shows that clients connect the server containing a Dfs tree, which stores a file system directory that associates stored files with their storage location.

27. Leung and the Microsoft Windows NT Server Administrator's Bible: Option Pack are analogous art because they are from the same field of endeavor, the design of distributed storage systems.

28. At the time of the invention it would have been obvious to one of ordinary skill in the art to store a tree representing the locations of stored files on the server that users contact to store files.

29. The motivation for doing so would have been to allow users to retrieve their stored files, even if they had been moved by the DMS.

30. Therefore it would have been obvious to one of ordinary skill in the art to combine The Microsoft Windows NT Server Administrator's Bible: Option Pack with Leung for the benefit of allowing users to retrieve their stored files to obtain the invention as specified in **claims 4-5**.

31. **Claim 5** is taught by the Microsoft Windows NT Server Administrator's Bible: Option Pack as:

bb. *The system of claim 4, wherein the storage grid manager further receives requests to retrieve the files from the users, and wherein the storage grid*

manager consults the mapping to identify the selected storage cells and retrieve the files. The 9th paragraph of page 2 shows that clients connect the server containing a Dfs tree, which stores a file system directory that associates stored files with their storage location

32. **Claim 11** is taught by Leung as shown supra with respect to claim 8.

33. Leung does not explicitly teach the use of a mapping between files and their storage location to allow the retrieval of the stored files.

34. The Microsoft Windows NT Server Administrator's Bible: Option Pack teaches:
cc. *Wherein the storage grid manager further maintains a mapping that associates the files with the selected storage cells in which the files are stored.*
The 9th paragraph of page 2 shows that clients connect the server containing a Dfs tree, which stores a file system directory that associates stored files with their storage location.

35. Leung and the Microsoft Windows NT Server Administrator's Bible: Option Pack are analogous art because they are from the same field of endeavor, the design of distributed storage systems.

36. At the time of the invention it would have been obvious to one of ordinary skill in the art to store a tree representing the locations of stored files on the server that users contact to store files.

37. The motivation for doing so would have been to allow users to retrieve their stored files, even if they had been moved by the DMS.

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38. Therefore it would have been obvious to one of ordinary skill in the art to combine The Microsoft Windows NT Server Administrator's Bible: Option Pack with Leung for the benefit of allowing users to retrieve their stored files to obtain the invention as specified in **claims 11-12**.

39. **Claim 12** is taught by the Microsoft Windows NT Server Administrator's Bible: Option Pack as:

dd. *The system of claim 11, wherein the storage grid manager further receives requests to retrieve the files from the users, and wherein the storage grid manager consults the mapping to identify the selected storage cells and retrieve the files.* The 9th paragraph of page 2 shows that clients connect the server containing a Dfs tree, which stores a file system directory that associates stored files with their storage location.

40. **Claim 20** is taught by Leung as shown supra with respect to claim 15.

41. Leung does not explicitly teach the use of a mapping between files and their storage location to allow the retrieval of the stored files.

42. The Microsoft Windows NT Server Administrator's Bible: Option Pack teaches:

ee. *Further comprising the storage grid manager maintaining a mapping that associates the files with the storage cells in which the files are stored, after the storing step.* The 9th paragraph of page 2 shows that clients connect the server containing a Dfs tree, which stores a file system directory that associates stored

files with their storage location. The mapping must be maintained after the storing step to allow the users to locate their files after they are stored.

43. Leung and the Microsoft Windows NT Server Administrator's Bible: Option Pack are analogous art because they are from the same field of endeavor, the design of distributed storage systems.

44. At the time of the invention it would have been obvious to one of ordinary skill in the art to store a tree representing the locations of stored files on the server that users contact to store files.

45. The motivation for doing so would have been to allow users to retrieve their stored files, even if they had been moved by the DMS.

46. Therefore it would have been obvious to one of ordinary skill in the art to combine The Microsoft Windows NT Server Administrator's Bible: Option Pack with Leung for the benefit of allowing users to retrieve their stored files to obtain the invention as specified in **claims 20-21**.

47. **Claim 21** is taught by the Microsoft Windows NT Server Administrator's Bible: Option Pack as:

ff. *The method of claim 20, further comprising retrieving the files from the appropriate storage cells with the following steps: receiving requests on the storage grid manager to retrieve the files; consulting the mapping to identify the storage cells in case that a storage cell that is identified based on a geographical parameter is not optimal; and retrieving the files from the storage cells.* The 9th paragraph of page 2 shows that clients connect the server containing a Dfs tree,

which stores a file system directory that associates stored files with their storage location. It would be obvious to use a mapping to locate the stored data even if it was stored in the location it is stored in because a geographical parameter was not optional.

48. **Claim 22** is taught by Leung as shown supra with respect to claim 1. The same DMS that routes the files to the storage locations would also retrieve the files in a similar manner.

49. Leung does not explicitly teach the use of a mapping between files and their storage location to allow the retrieval of the stored files.

50. The Microsoft Windows NT Server Administrator's Bible: Option Pack teaches:

gg. *Receiving requests on a storage grid manager to retrieve the files; identifying storage cells of the enterprise storage system in which the files are stored based a mapping;* The 9th paragraph of page 2 shows that clients connect the server containing a Dfs tree, which stores a file system directory that associates stored files with their storage location.

51. Leung and the Microsoft Windows NT Server Administrator's Bible: Option Pack are analogous art because they are from the same field of endeavor, the design of distributed storage systems.

52. At the time of the invention it would have been obvious to one of ordinary skill in the art to store a tree representing the locations of stored files on the server that users contact to store files.

53. The motivation for doing so would have been to allow users to retrieve their stored files, even if they had been moved by the DMS.

54. Therefore it would have been obvious to one of ordinary skill in the art to combine The Microsoft Windows NT Server Administrator's Bible: Option Pack with Leung for the benefit of allowing users to retrieve their stored files to obtain the invention as specified in **claims 30-31**.

55. **Claim 23** is taught by the Leung as:

hh. *The method of claim 22, further comprising storing the files, prior to the receiving step, with the following steps: receiving requests on the storage grid manager to store the files. See data management server (DMS) item 104 of figure 1. Paragraph 0078 discuss conditions in which the DMS decides where to store data, and lines 18-21 show that one such condition is when a user stores a data file in the storage system.*

ii. *Identifying storage cells of the enterprise storage system for storing the files based on at least one performance parameter. Paragraphs 0049-0055 give examples of device performance parameters that are used by the DMS to determine the storage location.*

jj. *Routing the requests to store the files from the storage grid manager to storage grid controllers associated with the storage cells, and storing the files in the storage cells. Paragraph 0029 lines 1-4 shows that the DMS automates the storing of data to the available storage devices.*

56. **Claim 24** is taught by Leung as:

kk. *The method of claim 23, wherein the at least one performance parameter is selected from the group consisting of a user identity, a storage cost, a user requirement, a desired cell usage pattern, a security requirement, a storage cell availability, a redundancy requirement and a network optimization requirement.*

Paragraphs 0050-0055 and 0059-0064 give examples of the parameters the DMS may use to decide file storage locations. These examples include user identity, storage cost, user requirements, usage patterns, storage availability, redundancy and network optimization.

57. **Claim 30** is taught by Leung as shown supra with respect to claim 8.

58. Leung does not explicitly teach the use of a mapping between files and their storage location to allow the retrieval of the stored files.

59. The Microsoft Windows NT Server Administrator's Bible: Option Pack teaches:

II. *Wherein the storage grid manager further maintains a mapping that associates the files with the selected storage cells in which the files are stored.*

The 9th paragraph of page 2 shows that clients connect the server containing a Dfs tree, which stores a file system directory that associates stored files with their storage location.

60. Leung and the Microsoft Windows NT Server Administrator's Bible: Option Pack are analogous art because they are from the same field of endeavor, the design of distributed storage systems.

61. At the time of the invention it would have been obvious to one of ordinary skill in the art to store a tree representing the locations of stored files on the server that users contact to store files.

62. The motivation for doing so would have been to allow users to retrieve their stored files, even if they had been moved by the DMS.

63. Therefore it would have been obvious to one of ordinary skill in the art to combine The Microsoft Windows NT Server Administrator's Bible: Option Pack with Leung for the benefit of allowing users to retrieve their stored files to obtain the invention as specified in **claims 30-31**.

64. **Claim 31** is taught by the Microsoft Windows NT Server Administrator's Bible: Option Pack as:

mm. *The program product of claim 30, wherein the storage grid manager further receives requests to retrieve the files from the users, and wherein the storage grid manager consults the mapping to identify the selected storage cells and retrieve the files.* The 9th paragraph of page 2 shows that clients connect the server containing a Dfs tree, which stores a file system directory that associates stored files with their storage location.

65. **Claims 3, 10, 19, and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung in view of Armitano et al (US 2004/0230795).

66. **Claim 3** is taught by Leung as shown above with respect to claims 1 and 2.

67. Leung does not teach the storage devices further enforcing access control specifications for the storage cells.

68. Armitano teaches the use of a policy engine with a storage device to allow it to process access control policies for a storage device (see paragraph 0007). Paragraphs 0024-0027 give examples of the type of access control policies enforced by the policy engine.

69. Leung and Armitano are analogous art as they are from the same field of endeavor, the design of data storage devices.

70. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use a storage device including a policy engine as taught by Armitano as the storage devices in the storage system of Leung.

71. The motivation for doing so would have been lessening the load on the storage device's CPU by allowing policies to be enforced by a separate device (Armitano paragraph 0017 lines 1-5)

72. Therefore it would have been obvious to combine Armitano with Leung to obtain the invention as specified in **claim 3**.

73. **Claim 10** is taught by Leung as shown above with respect to claims 8 and 9.

74. Leung does not teach the storage devices further enforcing access control specifications for the storage cells.

75. Armitano teaches the use of a policy engine with a storage device to allow it to process access control policies for a storage device (see paragraph 0007). Paragraphs

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0024-0027 give examples of the type of access control policies enforced by the policy engine.

76. Leung and Armitano are analogous art as they are from the same field of endeavor, the design of data storage devices.

77. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use a storage device including a policy engine as taught by Armitano as the storage devices in the storage system of Leung.

78. The motivation for doing so would have been lessening the load on the storage device's CPU by allowing policies to be enforced by a separate device (Armitano paragraph 0017 lines 1-5)

79. Therefore it would have been obvious to combine Armitano with Leung to obtain the invention as specified in **claim 10**.

80. **Claim 19** is taught by Leung as shown above with respect to claim 15.

81. Leung does not teach the storage devices further enforcing access control specifications for the storage cells.

82. Armitano teaches the use of a policy engine with a storage device to allow it to process access control policies for a storage device (see paragraph 0007). Paragraphs 0024-0027 give examples of the type of access control policies enforced by the policy engine.

83. The policy engine enforces access control before the file is stored in the storage device (see figure 2, discussed in paragraph 0035).

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84. Leung and Armitano are analogous art as they are from the same field of endeavor, the design of data storage devices.

85. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use a storage device including a policy engine as taught by Armitano as the storage devices in the storage system of Leung.

86. The motivation for doing so would have been lessening the load on the storage device's CPU by allowing policies to be enforced by a separate device (Armitano paragraph 0017 lines 1-5)

Therefore it would have been obvious to combine Armitano with Leung to obtain the invention as specified in **claim 19**.

87. **Claim 29** is taught by Leung as shown above with respect to claims 27 and 28.

88. Leung does not teach the storage devices further enforcing access control specifications for the storage cells.

89. Armitano teaches the use of a policy engine with a storage device to allow it to process access control policies for a storage device (see paragraph 0007). Paragraphs 0024-0027 give examples of the type of access control policies enforced by the policy engine.

90. Leung and Armitano are analogous art as they are from the same field of endeavor, the design of data storage devices.

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91. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use a storage device including a policy engine as taught by Armitano as the storage devices in the storage system of Leung.

92. The motivation for doing so would have been lessening the load on the storage device's CPU by allowing policies to be enforced by a separate device (Armitano paragraph 0017 lines 1-5)

Therefore it would have been obvious to combine Armitano with Leung to obtain the invention as specified in **claim 29**.

93. **Claim 26** is rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al (cited supra) in view of Microsoft Windows NT Server Administrator's Bible: Option Pack Edition (cited supra) and further in view of Armitano (cited supra).

94. **Claim 26** is taught by Leung in view of the Microsoft Windows NT Server Administrator's Bible: Option Pack Edition as shown supra with respect to claim 22.

95. Leung in view of the Microsoft Windows NT Server Administrator's Bible: Option Pack Edition does not teach the storage devices further enforcing access control specifications for the storage cells.

96. Armitano teaches the use of a policy engine with a storage device to allow it to process access control policies for a storage device (see paragraph 0007). Paragraphs 0024-0027 give examples of the type of access control policies enforced by the policy engine.

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97. Leung in view of the Microsoft Windows NT Server Administrator's Bible: Option Pack Edition and Armitano are analogous art as they are from the same field of endeavor, the design of data storage devices.

98. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use a storage device including a policy engine as taught by Armitano as the storage devices in the storage system of Leung in view of the Microsoft Windows NT Server Administrator's Bible: Option Pack Edition.

99. The motivation for doing so would have been lessening the load on the storage device's CPU by allowing policies to be enforced by a separate device (Armitano paragraph 0017 lines 1-5)

100. Therefore it would have been obvious to combine Armitano with Leung in view of the Microsoft Windows NT Server Administrator's Bible: Option Pack Edition to obtain the invention as specified in **claim 26**.

Response to Arguments

101. Applicant's arguments filed 1/17/06 have been fully considered but they are not persuasive.

102. First Point of Argument

103. At Page 11 lines 6-14 of Applicant's arguments, Applicant argues that the limitation "*wherein the requests are routed to the selected storage cells in identical communication protocols in which the requests are received by the storage grid manager*" as recited in claims 7, 14, 17, 25, and 33 is taught by the specification. The examiner respectfully disagrees. Applicant states:

nn. Specifically, the request is "transmitted to web server and/or application server, and from there to a respective "protocol" server." Para. 0023 Examples of respective protocol servers include the following protocols: FTP, HTTP, CIFS, NFS, SMB, etc. From the respective protocol server, the request "will be routed to storage grid manager (e.g., to one [of] a possible group of storage grid managers)." Par. 0024. To this extent, the respective protocol server routes the request to a storage grid manager using a particular protocol. See also FIG. 1, in which requests using different protocols are transmitted to one of three protocol servers based on the protocol and from there to the storage grid managers. The request may be then be routed from the storage grid manager to the selected storage cells using the same protocol or a private protocol.

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104. The Examiner notes that there is no support shown in the specification for the protocol servers routing the request to a storage grid manager using a particular protocol. Paragraph 0024 lines 1-2 state "*Once the request is received by a protocol server 22A-C, it will be routed to storage grid manager 24 (e.g., to one a possible group of storage grid managers.*" There is no mention in paragraphs 0023-0026 of a protocol server using a particular protocol to route the request to a storage grid manager, as argued by Applicant.

105. Additionally, in lines 11-14 Applicant states "*The request may be then be routed from the storage grid manager to the selected storage cells using the same protocol or a private protocol.*" This argument is not commiserate with the scope of the claims, which require that "*the requests are routed to the selected storage cells in identical communication protocols in which the requests are received by the storage grid manager*", not using the same protocol or a private protocol. Further, this argument does not provide an explanation of how requests are routed from the storage grid manager to the selected storage cells in identical communication protocols in which the requests are received by the storage grid manager as recited in claims 7, 14, 17, 25, and 33.

106. **Second Point of Argument**

107. At page 11 lines 19-21 of Applicant's arguments, Applicant asserts that the amendment to claim 27 is sufficient to limit the claim to statutory subject matter. The examiner agrees, and accordingly the rejection of claims 27-33 under 35 U.S.C. 101 has been withdrawn.

108. Third Point of Argument

109. At page 12 lines 10-11 of Applicant's arguments, with respect to claims 1, 8, 15, and 27, Applicant argues "*Leung fails to teach that its heterogeneous storage system is geographically separated.*" The examiner respectfully disagrees, and refers applicant to the rejection *supra*.

110. Fourth Point of Argument

111. At page 12 lines 19-22 of the Applicant's arguments, with respect to claims 1, 8, 15, and 27, Applicant argues "*Leung also fails to teach that the selected storage cells are identified based on at least one predetermined performance parameter in case that a storage cell that is identified based on a geographical parameter is not optimal.*" The examiner respectfully disagrees, and refers applicant to the rejection *supra*.

112. Fifth Point of Argument

113. At page 13 lines 4-6 of the Applicant's arguments, with respect to claims 1, 8, 15, and 27, Applicant argues that "*Leung does not teach that its device characteristics are used in case that a storage cell identified based on a geographical parameter is not optimal.*" The examiner respectfully disagrees, and refers Applicant to the rejection *supra*.

114. Sixth Point of Argument

115. At page 13 lines 16-16 of Applicant's arguments, Applicant argues "*that all dependent claims are allowable based on their own distinct features.*" The examiner respectfully disagrees, and refers Applicant to the rejection *supra*.

116. Seventh Point of Argument

117. At page 14 lines 5-6 of Applicant's arguments, with respect to claim 22, Applicant argues that "*Leung fails to teach or suggest a geographically separated enterprise storage system.*" The examiner respectfully disagrees, and refers Applicant to the rejection *supra*.

118. Eighth Point of Argument

119. At page 14 lines 7-10 of Applicant's arguments, with respect to claim 22, Applicant argues "*Leung also fails to teach or suggest the selected storage cells are identified based on at least one predetermined performance parameter in case that a storage cell that is identified based on a geographical parameter is not optimal.*" The examiner respectfully disagrees, and refers Applicant to the rejection *supra*.

120. Ninth Point of Argument

121. At page 14 lines 14-15 of Applicant's arguments, Applicant argues "*all dependent claims are allowable based on their own distinct features.*" The examiner respectfully disagrees, and refers Applicant to the rejection *supra*.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jared I. Rutz whose telephone number is (571) 272-5535. The examiner can normally be reached on M-F 8:00 AM - 4:00 PM.

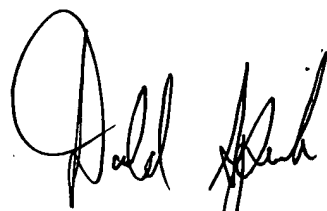
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Jared I Rutz
Examiner
Art Unit 2187

jir



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SUPERVISORY PATENT EXAMINER